

State legislature is considering a proposal to lower the legal limit for the blood alcohol level that constitutes drunk driving. A legislator wants to determine if a majority of adults in her district favor this proposal. To gather info, she surveys 200 randomly selected adult individuals from her district and learns that 59% of these people favor the proposal. Can the legislator conclude that a majority of all adults in her district favor this proposal? Use a significance level of 0.05 to test this claim.

$$n = 200$$

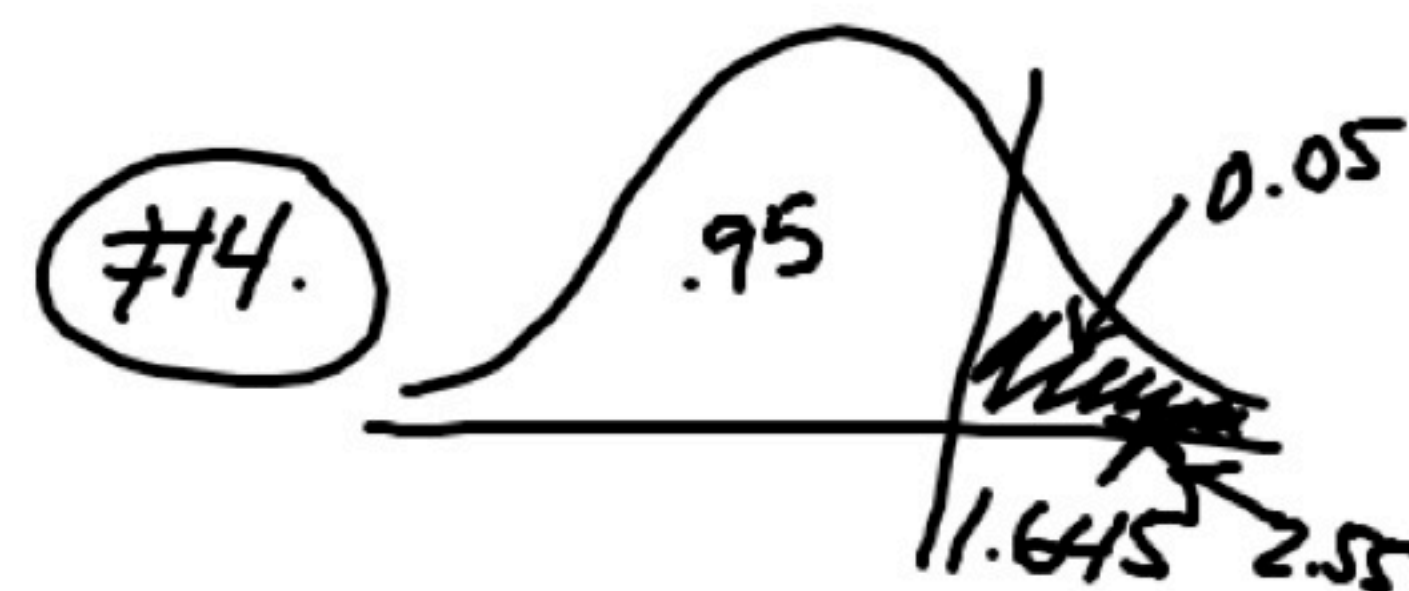
$$\hat{p} = .59$$

#1 $H_0: p = .5$ ← Assume true

$H_A: p > .5$

#2 $\alpha = 0.05$

#3
$$z = \frac{\hat{p} - p}{\sqrt{\frac{p(1-p)}{n}}} = \frac{.59 - .5}{\sqrt{\frac{(.5)(.5)}{200}}} = 2.55$$



#5. Reject H_0
 ↳ supporting H_A
 So yes, majority want to lower.